

REMARKS

Claims 1-5 are pending. By this response, a new title is provided, the specification and claims 1, 4 and 5 are amended and claim 6 is cancelled. Reconsideration and allowance based on the above amendments and following remarks are respectfully requested.

Specification

The Office Action asserts that the title is not descriptive and requests a new title. In response, Applicants have provided a new title recommended in the Office Action. The new title is as follows "IMAGE CAPTURING APPARATUS FOR ADJUSTING A RELATIVE POSITION BETWEEN AN IMAGE SENSOR AND AN OPTICAL AXIS." Withdrawal of the objection to the title is respectfully requested.

Objections

The Office Action objects to the specification at paragraph [0004] line 5 due to a misspelling of the term "required." Applicants have amended the specification to correct this misspelling.

The Office Action also objects to the term "an" on line 5 of claim 4. In response, Applicants have amended claim 4 to remove this term from the claim.

In view of the above Applicants respectfully submit that the objects have been addressed by the above-noted amendments. Accordingly, withdrawal of the objections are respectfully requested.

Claim 1

The Office Action rejects claims 1 and 2 under 35 U.S.C. § 103(a) as being unpatentable over Suzuki et al. (U.S. 6,236,430) in view of Miyaguchi et al. (U.S. 5,508,740) and Kimura (U.S. 5,051,798) and claims 1 and 3 under 35 U.S.C. § 103(a) as being unpatentable over Kitagawa (U.S. 6,803,949), Miyaguchi and Kimura. These rejections are respectfully traversed.

It is asserted in the Office Action that both Suzuki and Kitagawa teach an image capturing apparatus which includes a position adjustment mechanism recited in claim 1. Applicants respectfully disagree.

Claim 1 has been amended to recite, *inter alia*, the position adjustment mechanism for changing a relative position between the image capturing area of the image sensor and an optical axis of the incident light directed from the optical system to the image capturing area, by half of one or both of a longitudinal and lateral length of the blocks determined by the number and position in the grid of operational blocks of the plurality of blocks, such that the center of the image capturing area coincides with the optical axis of the incident light.

Applicants respectfully submit that neither Suzuki nor Kitagawa change the position of the area of the image sensor based on the number of blocks the position of those blocks in the grid so that the center of the image capturing area coincides with an optical axis. Both Suzuki and Kitagawa teach similar image sensing apparatus. Suzuki and Kitagawa teach a system in which a plurality of image sensors are positioned in a grid to capture image data. In order to increase the quality of the image without including numerous other sensors the same sensors are moved to different positions thus capturing that image at different sensing positions with respect to the optical axis. Each of the images are stored in the memory and later synthesized to form a

single image. See, for example, 17a - 19d of Kitagawa and Fig. 4 - Fig. 7 of Suzuki and a description thereof.

Applicants respectfully submit that neither Kitagawa or Suzuki teach or suggest positioning an image capturing area of the image sensor determined by the number and position in the grid of operational blocks such that the center of the image capturing area coincides with an optical axis of the incident light. In fact, both Kitagawa and Suzuki purposely move a pixel arrangement at various angles with respect to the optical axis of the incident light in order to capture the image representation at the various angle to synthesize a multiple captured images to provide a single high quality image.

Applicants respectfully submit that neither Miyaguchi or Kimura remedy the deficiencies of Suzuki and Kitagawa. Therefore, the combination of Suzuki or Kitagawa with Miyaguchi or Kimura fail to teach each and every feature of Applicants' independent claim 1. Accordingly, reconsideration and withdrawal of the rejections noted above are respectfully requested.

Claim 4

The Office Action rejects claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Yamamoto et al. (U.S. 5,436,161) in view of Miyaguchi and Kimura. These rejections are respectfully traversed.

Claim 4 recites, *inter alia*, the image sensor mount section to which image section is removable attached, wherein a plurality of different packages are provided, including a package in which the chip is attachable so that a center of all the blocks constituting the image capturing area coincides with an optical axis of the incident light, and another package to which the chip is

attachable so that a center of at least one of the blocks constituting the image capturing area coincides with the optical axis of the incident light. Applicants respectfully submit that these features are not taught or suggested by the combination of Yamamoto, Miyaguchi and Kimura.

In the rejection the Examiner asserts that "it is inherent that an image sensor is replaceably attached. An image sensor can be ripped-off and glued back on." See page 7 of the Office Action. Applicants note that the Examiner must examine Applicant's claim using a reasonable broad interpretation thereof. Applicants respectfully submit that Examiner has failed to reasonably interpret the claimed "image sensor mount section to which the image sensor is removably attached." First, Applicants note that the Examiner should determine the understanding of the claim language based on its description in the specification and figures. A description of removably attaching the sensor onto the mount is described with reference to Figs. 2, 9 and 10. As illustrated in Figs. 9 and 10 the image sensor includes a plurality of pins used to attach the image sensor to the image sensor mount. This allows the image sensor to be removably attached. Further, Applicants note that one of ordinary skill in the art would not reference gluing and ripping-off the glued back as being removably attached. In fact, Applicants contend that one of ordinary skill would refer to gluing as being the opposite, i.e., fixedly attaching an item, whereas ripping-off an item due to the gluing would be deemed as a destructive operation and not coinciding with Applicant's claimed removably attached and intent as disclosed in the specification in Fig. 3.

Claim 4 recites different packages one in which a chip is attached so that a center of the image caption area coincides with an optical axis of instant light and another in which the center of one of the blocks in the image capturing area coincides with the optical axis of the center line.

Thus, the first package concerns the center of the image caption area and the second package concerns the center of one of the blocks constituting the image constituting area. The Office Action alleges that the plurality of pixels located in the grid constitute the claim packages and the pixels moved from one location to another. The Office Action alleges that the incident light will hit all areas including the center of the sensor.

Applicants note that the claim does not refer to incident light alone but refers to the optical axis of the incident light. Therefore, the focal axis point of the incident light must coincide with the specific claimed features. Applicants respectfully submit that Yamamoto fails to teach or suggest this feature. Yamamoto teaches providing light to an array of image sensors. Yamamoto makes no suggestion or teaching of aligning the optical axis in one package to the center of the area of the image blocks and in a second package a center of one of the blocks constituting the image area.

Further, Miyaguchi and Kimura fail to remedy the deficiencies of Yamamoto. Therefore, Applicants respectfully submit that the combination of Yamamoto, Miyaguchi and Kimura fail to teach each and every feature of independent claim 4 as required. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Claim 5

The Office Action rejects claims 5 and 6 under 35 U.S.C. § 102(e) as being anticipated by Fossum et al. (U.S. 6,665,013). This rejection is respectfully traversed.

Claim 5 recites, *inter alia*, an image sensor comprising a chip, wherein an image capturing area of the chip comprises a plurality of blocks each having image information read-

out lines, and voltage supply wires for controlling circuitry in each block is provided in a region along a first of at least one of two demarcation lines between the blocks, wherein the second of at least two demarcation lines is void of circuitry or wires allowing the chip to be cuttable along with second demarcation line without affecting operability of the image sensors.

Fossum teaches a pixel sensor array. This array is a standard pixel array having columns and row read-out lines for selecting the read-out of the sensors and obtaining the read-outs for output to the processor. Nowhere does Fossum teach or suggest at least two demarcation lines one which is void of circuitry and wire thus allowing the sensor array to be cut along that line without affecting the operability of the image sensors. It is asserted in the Office Action that the column read-out lines are interpreted as the demarcation lines and that it is inherent anything is cuttable. Applicants respectfully submit that the column read-out lines are not void of circuitry and wires and that not anything is cuttable while maintaining the operability of the item cut. In the case of the present invention, the operability of the image sensors is not affected by cutting at the claimed demarcation line.

Therefore, Applicants respectfully submit that Fossum fails to teach each and every feature of independent claim 5 as required. Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

CONCLUSION

For at least these reasons, is respectfully submitted that claims 1-5 are distinguishable over the applied art. Favorable consideration and allowance are earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant respectfully petitions for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of \$120.00 is attached hereto.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad J. Billings Reg. No. 48,917 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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